

ABSTRACT

A semiconductor device which effectively reduces copper oxide layers on copper conductive lines is disclosed. The method includes forming a first insulating layer on a semiconductor substrate; forming a first conductive line by depositing a conductive material on the first insulating layer and selectively patterning the conductive material. A second insulating layer is deposited on top of the substrate including on the first conductive line. A via hole is formed by selectively patterning the second insulating layer to expose a certain portion of the first conductive line. A natural oxide layer is removed by plasma-processing the natural oxide layer using H_2+CO gas.